

## ABSTRACT OF THE DISCLOSURE

A diversity antenna branch selection module includes first and second computation stages. The first computation stage computes an approximate bit error probability for each of K sub-carriers in an Orthogonal Frequency-Division Multiplexing (OFDM) signal for each of L different antenna branches n antenna branches at a time. The second computation stage processes the approximate bit error probabilities to identify a group of n of the L different antenna branches that minimizes an approximate bit error probability of a signal that will eventually be constructed from sub-carriers that are each received by any one of the n antenna branches in the identified group. The module is ideal for use in a system having n radio frequency receivers and for wireless local area network (WLAN) applications operating at high frequencies, such as 5 to 6 GHz, in multipath environments.